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Working Group on Recommendations for the 1990 Round of Population and Housing Censuses in Africa

Addis Ababa, 18-22 May 1987

REPORT OF THE WORKING GROUP ON RECOMMENDATIONS FOR THE 1990 ROUND OF POPULATION AND HOUSING CENSUSES IN AFRICA

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A. ATTENDANCE AND ORGANIZATION

Opening and duration of meeting

1. The Working Group on Recommendations for the 1990 Round of Population and Housing Censuses in Africa met at the Headquarters of the Economic Commission for Africa (ECA), Addis Ababa from 18 to 22 May 1987. The meeting was convened with the financial support of the United Nations Fund for Population Activities (UNFPA). The Deputy Executive Secretary opened the meeting.

Attendance

2. The meeting was attended by 20 African experts with experience in past population and housing censuses. The experts who were invited in their individual capacities were from the following countries: Congo, Ethiopia, Gambia, Ghana, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Nigeria, Senegal, Sudan, Tanzania, Togo, Tunisia, Uganda and Zaire.

3. Representatives of the following organizations attended as observers: International Labour Organization (ILO), Institut de formation et de recherche démographiques (IFORD), Yaounde, International Bank for Reconstruction and Development (World Bank), the Regional Institute for Population Studies (RIPS), Legon, Ghana, United Nations Fund for Population Activities (UNFPA), United Nations Statistical Office (UNSO) and United States Bureau of the Census.

Election of Officers

4. Ms. Mpho Morojele (Lesotho) was elected chairperson of the Working Group, with Mr. Balla Diallo (Mali) as Vice-chairman and Mr. Harish Bundhoo (Mauritius) as rapporteur.

B. AGENDA

5. The meeting adopted the following agenda:

1. Opening address
2. Election of officers
3. Adoption of the agenda
4. Progress report on the 1980 round of African Population and Housing Censuses
5. Emerging issues in African Population and Housing Censuses
   - (a) Review of organizational issues in the planning and execution of censuses
   - (b) Census enumeration procedures including coverage of special population groups
   - (c) Definition of total population
   - (d) Role of cartography in censuses
     - Pre-enumeration phase
     - Post-enumeration phase
   - (e) Quality control in census enumeration;
   - (f) Use of sampling in censuses

6. Measurement of economic activity in population censuses
7. Coverage and content error evaluation
8. Census data processing
9. Analysis of census results
10. Publication and dissemination of census results
11. Financing population census programmes and role of external assistance
12. Recommendations
13. Other business
14. Evaluation of the Working Group
15. Adoption of report

C. ACCOUNT OF PROCEEDINGS

Opening address (agenda item 1)

6. The Deputy Executive Secretary of ECA opened the meeting on behalf of the Executive Secretary. After welcoming all participants to the meeting, he paid tribute to the late Raphael Salas, first UNFPA Executive Director who made valuable contribution to the promotion of population activities in developing countries particularly in Africa.

7. The Deputy Executive Secretary then noted with satisfaction that all ECA member countries except Chad, Nigeria and Sierra Leone carried out censuses during the period 1975 to 1984 and for 16 of the countries it was for the first time. He recalled that the meeting of the Working Group was the fourth such meeting on recommendations for population and housing censuses in Africa to be organized by ECA since 1965.

8. The attention of the Working Group was drawn by the Deputy Executive Secretary particularly to a number of issues which he considered important for the 1990 round of population and housing censuses in the region. He first pointed out the necessity of formulating a well defined census cartography programme on the basis of objectives which are clearly spelt out. He then indicated that African countries should consider using more systematically sampling methods in their population and housing census programmes, particularly for the collection of additional information on some important topics checking the census coverage, controlling the quality of data processing and production of advance tabulations on selected items. The Deputy Executive Secretary was of the view that the use of sampling methods could save time and money if well designed,and would enable the timely production of reliable data.

9. He also stressed the importance of measuring economic activity in population and housing censuses and invited the working group to formulate appropriate recommendations on this issue, particularly regarding the use of the concepts of usual activity and current activity, in the light of the relevant resolution adopted by the 13th International Conference of Labour Statisticians. The Deputy Executive Secretary then proposed steps to be taken to ensure that census data processing is carried out smoothly, especially in

view of the new technological developments in this area. He also urged the working group to make recommendations on the best way of integrating the evaluation and analysis of census data into the overall programme of the 1990 round of censuses as he noted that this important phase of the census had been somewhat neglected in the past.

10. Finally, the Deputy Executive Secretary expressed his gratitude to UNFPA for its financial support in the organization of the working group despite the financial crisis of the entire United Nations family and thanked the national and international agencies which have sent representatives to the meeting, thus demonstrating their interest in the African population and housing censuses.

Progress Report on the 1980 Round of Population and Housing Censuses in Africa (agenda item 4)

11. The secretariat introduced document E/ECA/CPH/6 on this agenda item and said that 47 ECA member countries had carried out population and housing censuses in the course of the 1975-1984 decade. It was the first time ever that 16 of those countries had carried out such an exercise. About half of the 47 countries had fallen behind schedule and been unable to keep to the enumeration dates initially set.

12. Census data processing, analysis, publication and dissemination had been the weak areas of the 1980 round of censuses because those aspects had not been given the attention they deserved by the census organizers. The following were some of the causes of the delays in implementing the various African censuses carried out during the period under review: the late establishment of the legal basis and structures for the census, the fact that means of transport and computer hardware were not made available on time, the lack of permanent cartography units within the statistics departments and political problems

13. In the ensuing discussions, participants felt that every possible effort should be made to maintain the principle of carrying out a census every ten years in order to have comparable and regularly-spaced data. Some participants deplored the fact that the document under consideration did not have figures on the cost of the censuses carried out in Africa and on the contribution of external assistance. They felt that the mobilization of funds was the main reason for delays in implementing the various phases of the census and that the UNDP resident representative in each country who also represented UNFPA should be empowered to facilitate the financial management of UNFPA assistance. A proposal was made for UNFPA to promote and co-ordinate the co-financing of census projects by various donor agencies in view of the paucity of resources available in each country of the region. At that point, the secretariat drew the attention of the Working Group to document E/ECA/CPH/7 that dealt with the financing of population census programmes and the role of external assistance. He therefore proposed that the discussions on the financing of censuses should be contined under agenda item 11 where that document would be considered.

14. Some participants stressed the need to approve and publish legislation on censuses two to three years before the scheduled date of the enumeration in order not to delay the start of operations. Other participants stressed the importance of publicity and education to make the people and the authorities aware of what the census entailed in order to get their co-operation. In that respect, it was indicated that censuses should be taken as the basis for the preparation of economic and social development plans.

15. Several participants mentioned the problems they had encountered in preparing census cartography. They included the lack of field vehicles and the delay in the provision of the funds and equipment required. It was suggested that the national census office should have its own cartographic equipment and should not depend on other agencies for such equipment. Some participants expressed interest in the adoption of a joint African regional strategy on post-census surveys.

16. Several problems were raised with respect to data processing particularly the shortage of appropriate staff, the change of staff in the course of data processing, the late installation of computer hardware and sometimes the purchase of hardware that was unsuitable for local use. Several participants suggested that computer hardware should be installed before the pilot census so that the whole system could be tested and time saved during the processing and analysis phase. Some participants were of the opinion that micro-computers were efficient but posed problems for the censuses because of the volume of data that had to be processed. In that regard, a representative of UNFPA spoke about some advantages of using micro-computers particularly the fact that they were easy to maintain and offered possibilities of using additional hardware in case of a breakdown. However, there was a need to ensure that data could be checked and provision made for appropriate data storage equipment.

17. The secretariat added that Burkina Faso had started processing the data of its last census on micro-computers and that the experiment appeared to have been very successful.

18. The working group acknowledged that the data analysis stage had been somehow neglected in previous African censuses. The meeting stressed the need to promote close collaboration among planners, statisticians and demographers as early as the design and organization phase of the census so as to ensure better co-ordination of the operation. They also recommended that the final census data should be made available to users within two years or at the latest three years after the enumeration.

19. Several participants provided information with a view to correcting and/or up-dating the document under discussion together with the annexes I and II. The expert from the Congo informed the Working Group that the document entitled "Population of localities" relating to the general population and housing census of 1984 had been published. In addition the following detailed statistical tables are available: fertility and marital status, population structure and migration, education, training and employment, economic activity and employment and characteristics of households and housing. The analysis of the data has started. The expert from Mali confirmed that his country had carried out the enumeration with respect to its second census in April 1987. The publication entitled "Summary of activities carried out during the census" mentioned in annex II was not among the official documents of his country's 1976 census. The expert

from Madagascar said that the population enumerated during the 1975 census was 7.6 million and that the next census would be carried out in April 1990. The expert from the Gambia corrected the date of the next census to read 1993.

20. The expert from Mozambique provided additional information to the figures indicated for his country in Annex I. The date of submission of the first request to UNFPA was November 1978 and the date initially fixed for the enumeration was August 1980. He also provided a list of publications on the 1980 census, namely: basic data by province and district, demographic panorama, migratory population movements; population and education, population, occupation and labour force; housing and standards of living; women in society; youth in society; composition of social groups and population projection up to the year 2000. The expert from Malawi added an administrative report to the list of publications on his country's 1977 census. The expert from Tunisia provided a list of his country's census publications. The publications on the 1975 census were: housing, households, resident population by sex, present population by sex and administrative unit, demographic characteristics (resident population), age, sex, marital status, disabled persons, foreign population, education and cultural characteristics, economic characteristics; internal migratory flows; population density for each administrative unit, households and heads of households. The following were published on the 1984 census, Volume I: population by administrative unit, Volume II. Housing conditions in Tunisia, Volume III. Educational and cultural characteristics; Volume IV. Demographic characteristics; Volume V. Economic characteristics. The experts from Ghana and Zaire indicated that the dates initially fixed for enumeration in their countries were March 1980 and July 1980 respectively.

21. The expert from Uganda indicated that total population data by sex and by administrative region in the 1980 census obtained through manual processing had been published in 1983 with the assistance of UNICEF and the Commonwealth Fund for Technical Co-operation (CFTC) before the questionnaires had been lost. Finally the expert from the Sudan informed the Working Group that two publications had come out on the 1983 census. total population by region, province and living conditions by sex (in Arabic and in English), and an administrative report. The data processing had been completed and the final tables for six of the 18 provinces were available.

22. In reply to questions from the floor, a representative of UNFPA said that his organization had fulfilled its financial commitments with regard to the 1981 census in Togo, in compliance with arrangements made with the Government. UNFPA had approved additional funds to pay for enumerators for the 1984 census in the Congo and that contribution was considered more important than supplying a plan printer. The Fund was a financing agency. The implementation of country projects was entrusted to the United Nations Department of Technical Co-operation for Development in New York. It was easier to manage projects in those countries where there were local UNFPA offices. Efforts would be made to strengthen such offices.

23. In reply to some questions from participants, the secretariat said that there was an unwritten agreement on the exchange of publications, dating back to 20 years, between the Directors of Statistics of the region and ECA and that it had not been deemed necessary to make specific requests in writing to the countries for census publications. Participants could have sent to ECA any useful comments and suggestions regarding the provisional agenda of the meeting, upon receipt of the letter of invitation. Finally, in reply to a question from the representative of IFORD, the secretariat indicated that those censuses for which enumeration had been completed during the 1975-1984 period had been considered as part of the 1980 round, in conformity with United Nations usage.

24. In concluding the discussion, the Working Group expressed the opinion that the discussions on that agenda item had been most useful and could be used for preparing recommendations for the 1990 round of population and housing censuses, following a more thorough consideration of the issues raised under the relevant agenda items.

Emerging Issues in African Population and Housing Censuses
Review of organizational issues in the planning and execution of censuses (agenda item 5(a))

25. The secretariat introduced this agenda item on the basis of the background document E/ECA/CPH/2(a) titled "Review of Organizational Issues in the Planning and Execution of Censuses". It was pointed out that an essential element in the planning of a census was the development of an organization capable of carrying out the various activities involved smoothly and effectively. It was indicated that the factors which have to be given due consideration in the establishment of the organizational structure include the objectives, financial, material and human resources, the geography of the country and the level of education of the people.

26. It was emphasized that since a census involves high-level decisions and implementation of those decisions, co-ordinating or decision-making bodies and relevant technical departments or units have to be set up. It was, however, stressed that the responsibilities of the various bodies and technical units within the census organization should be clearly indicated and the lines of authority clarified in the early stages of the census planning.

27. For the planning and implementation of census programmes, the secretariat pointed out that some of the offices which were set up for the past censuses did not have the organizational structure to enable them function effectively mainly because of shortage of staff.

28. In this connection it was pointed out that the organizational structure of the census office could take several forms but it should be such that effective division of labour is maintained and also flexible enough to be easily adjusted to the various phases of the census.

29 In the discussion that followed, the working group pointed out some of the problems caused by a delay in the provision of the necessary legal basis for the census and endorsed the need for the early enactment of the required legislation. A suggestion was made that the legislative authority for the census should be provided two or three years prior to the census enumeration. Another suggestion was that the countries which currently need special legislation for each census may consider bringing the census under the general statistical legislation with provision for the publication of regulations in respect of each census.

30. Reference was also made to the content of the census legislation. In this connection it was suggested that it would be useful to establish an ad hoc committee comprising the relevant government agencies to determine the content of the census legislation to ensure its effectiveness. Such a committee would see to it that the legislation is free from ambiguities as regards hierarchical responsibilities and rigid constraints regarding recruitment of qualified field staff, problems which seem to have hampered census operations in some countries.

31. The working group also recounted experiences with respect to census committees and it was indicated that in addition to the problem caused by high-level representation on the committees, transportation difficulties also had adverse effect on attendance at meetings.

32. There was also a general agreement on the need for a permanent census office which may be a division of the statistical office. Some members were of the view that the census office would operate more effectively if it was a separate establishment. A caution was sounded, however, that in view of financial constraints it might not be feasible to set up a new department purposely for the census.

33. The problem of brain drain and the resultant shortage of staff at census offices was also raised in connection with the need for a permanent census office. It was suggested that the problem could be tackled through improvement in conditions of service and staff development programmes. The need to make effective use of existing training institutions and also to use censuses as opportunities for training of staff was also stressed.

34. Finally a suggestion was made to the effect that in order to ensure maximum use of lessons from past censuses and also in view of the high turnover of staff in census offices there should be proper documentation of census experiences.

Census enumeration procedures including coverage of special population groups (agenda item 5(b))

35. The background document for this agenda item was "Enumeration Procedures" (E/ECA/CPH/2(b)). In introducing the document, the secretariat indicated that the enumeration phase of a census is regarded as very critical since the quality of the census results depends to a very large extent on the adequacy of the enumeration.

36. The enumeration phase involves the processes for the collection of the required information and it was pointed out that the issues in respect of those processes have been discussed in the background document in terms of: unit of enumeration, basis of enumeration, methods of enumeration, the census questionnaire, census reference time and duration of enumeration as well as the coverage of special population groups.

37. During the discussions participants reiterated the difficulty in the use of the household as unit of enumeration in some countries. Reference was made to situations where the concept could be applied in some parts of a country but would be inapplicable in other parts with different social systems. Some participants felt that the family nucleus might be more relevant as a unit of enumeration and analysis and would yield greater dividend.

38. The issue regarding coverage of nationals in another country during a census was also given due consideration and the difficulty in obtaining accurate information about them noted. Experiences in the use of a country's diplomatic mission to assist in the coverage of absent nationals were also recounted. It was stressed that it was necessary that a specific time frame is indicated in respect of the duration of absence in order to determine the inclusion or otherwise of the absent nationals in the count.

39. Some views were also expressed in respect of methods of enumeration. It was stated that where possible a combination of the householder or self-enumeration and direct interview or canvasser methods may be used in the collection of data. A suggestion was made that in such cases heads of household should be given the necessary instructions manual to ensure correct completion of the questionnaire. A contrary view was, however, expressed that the census questions should be made precise such that there would be no need to give heads of household any instruction manual which may not be read.

40. The suggestion regarding translations of census questions into other major national languages was also discussed. It was pointed out that if even translations of the census questions were provided the problem of enumerators translating responses into the language used in the completion of the questionnaire would still remain. A view was also expressed that if efforts were made to recruit enumerators from the areas where they would be working and adequate training given then it might not be necessary to translate the questions into other local languages since the enumerator would be able to do that.

41. The use of enumerators to code the census information was also discussed at length. A suggestion was made that the use of that strategy should involve a procedure where enumerators would circle the appropriate code numbers on the questionnaire during enumeration but the problem of space on the questionnaire was also pointed out. Some participants had preference for coding in the office while others felt that new strategies which might be improvement on old procedures were worth trying. A suggestion was also made that the use of enumerators to code census information may be used after due trials. Thus the working group did not come to a general consensus on this issue.

42. In the discussion of the coverage of special population groups, experiences in the coverage of the homeless, disabled and nomadic populations were described.

43. In the case of the coverage of the nomadic population, it was pointed out that some of the problems encountered emphasized the need for studies of their social systems and pattern of movement during intercensal periods and particularly during the census preparatory activities stage in order to determine the appropriate approach or combinations of approaches for their coverage.

44. In the case of the disabled it was suggested that in view of the social and technical difficulties connected with their coverage, investigation of disability in censuses may be restricted to selected severe disabilities which are relatively easily recognizable.

45. Finally, the lack of adequate testing in census procedures was mentioned. It was pointed out that even where tests were carried out, full use was not made of the lessons from them. Pilot tests undertaken in connection with censuses were often not fully processed and analysed. The need to remedy the situation was strongly stressed.

Definition of total population (agenda item 5(c))

46. The working group discussed this agenda item on the basis of the document "Total Population" (E/ECA/CPH/5(c)). The secretariat introduced the topic for discussion. The important uses of the total population figure were recalled and it was pointed out that many of the issues involved in a discussion of the definition of the total population of a country were raised during the discussion on enumeration procedures.

47. The secretariat indicated that there was the need for census organizers to indicate clearly whether the population to be covered in the census will be the usual residents or persons present in the country at the time of the census or both types. It was stressed that where both types are enumerated separate tabulations needed to be produced.

48. It was also stressed that the treatment of special population groups such as refugees, nationals in another country at the time of the census and others should be clearly indicated and the size of each such group in the total population given in census publications to help in international comparison.

49. In the discussion that followed, the issue of returning migrants soon after a census has been carried out and the problem it poses for planners in the use of census data was raised. A number of countries seemed to have faced that problem after their last census. It was indicated that in one country the problem was tackled through the use of records completed at border posts. A suggestion was also made that perhaps the institution of continuing household surveys programme might be the answer.

50. Some account of the practice in the coverage of both de jure and de facto populations in a census and procedures used to classify the population into the required population groups was also given.

51. It was also mentioned that there was the need to ensure a distinction between private households at institutions and the institutional population.

52. Finally, it was pointed out that it would be helpful if the special population groups listed in the document were classified into those which may be covered in a de jure count and those which may be included in a de facto count.

Role of cartography in censuses - (agenda item 5(d))

53. On the role of cartography in censuses the secretariat introduced documents E/ECA/CPH/2g(i) and E/ECA/CPH/2g(ii) dealing with the pre-enumeration and the post-enumeration phases respectively.

54. It was stressed that at the outset of the census planning a well-defined cartographic programme should be prepared based on clear short (pre-enumeration) medium (post-enumeration) and possibly long-term (intercensal) objectives. Such a programme should take into account the human, material and financial resources available and indicate an appropriate methodology system of organization and calendar.

55. It was recommended that for the 1990 round of censuses, particular attention should be paid to the plotting of the localities and the estimation of the population to ensure better EA delineation which should be done in the field.

56. As far as mapping work of towns was concerned, the attention of participants was drawn to the possibility of using high-resolution satellite imagery of the Spot type.

57. It was recommended that in order to reduce the costs of cartographic work for subsequent censuses, due attention should be paid to the preservation and continuous updating of the cartographic documents.

58. It was suggested that methodological and administrative reports published at the end of the census should contain statistics on the performance of field officers and draughtsmen and on the costs of the various phases of the operation.

59. In the area of cartography evaluation, it was indicated that a preliminary exercise may be carried out after the processing of the completed questionnaire prepared specially for that purpose. A more detailed evaluation could be obtained by calculating the population variances and household variances of the various administrative areas.

60. Finally, it was recommended that countries should consider making use of the current facilities offered by computer processing in the area of thematic cartography for the 1990 round of population and housing censuses. It was indicated, for instance, that there were integraters that could be used to shift from one software package to another for instance WINDOWS can be used on a micro-computer to shift from tables to graphs. There were also input devices which converted analogue graphic data into digital data suitable for IBM/micro-computers or IBM/compatible micro-computers. They thus made it possible to draw maps, sketchs, trace photos and pictures and select items on a menu (using for example, the graphic tablet summasketch).

61. In the presentation of the role of cartography in the post-enumeration phase of the census, the secretariat gave a detailed account of various activities to be covered under the post-enumeration census cartographic programme. The need for preparing a comprehensive work-plan covering all such activities as contemplated to be carried out during the post-censal phase was also underlined.

62. The indexing and storage of various maps procured/prepared by the cartography unit during the pre-enumeration phase is of paramount significance in order to ensure the availability of these maps for use in other post-censal cartographic activities as well as the preparatory activities of the next census.

63. The need of the return of field copies of various maps including the EA and SA maps, after their use and updating by the respective census staff during census enumeration was also emphasized. These field copies of the maps would serve as valuable documents in updating/correcting the corresponding master drawings and updating the census base maps. It was pointed out that in the 1980 round of African censuses the field maps were in a number of cases not returned to the central census office.

64. Regarding publication maps the secretariat emphasized their importance in understanding and analysing the census data and underlined the need of supplementing the census tables with these maps in an adequate manner. The possibility of producing census atlases containing these maps should also be explored since they would enable the census data users and all other interested agencies/individuals to have the census maps in one single volume.

65. In concluding the presentation the secretariat emphasized the need of setting-up permanent and effectively functional cartography units in the census offices.

66. After the presentation made by the secretariat, there was a wide range of discussions on the issues raised. While discussing the possibilities of using micro-computers in production of thematic maps and charts, the representative of the US Bureau of the Census informed the meeting about the paper prepared by the Bureau on computer mapping and indicated that she would make copies of this paper available to ECA who could send it to the delegates, if required. The title of the paper is "The Use of Micro-computer for Census Implementation in developing Countries".

67. The participants from various countries described their experience census cartography and touched upon several issues that need to be given special attention. It was mentioned that pilot census had a role to play in indentifying the problems that may affect the quality of cartographic work. For instance, problems have been encountered with the plotting of villages and in particular smaller hamlets, which are sometimes made part of villages to which they do not belong. It was mentioned that use of administrative lists of localities was not enough to ensure that all villages were plotted on the maps because these lists are prepared for purposes other than census enumeration and usually exclude small hamlets. It was noted that the time allowed for cartographic preparations was usually not sufficient with respect to the vast area of most of the countries in the region, and thus sometimes led to postponement of the planned enumeration date. Other factors contributing to such delays were: lack of qualified personnel; lack of appropriate equipment or delays in the procurement of such equipment; lack of co-ordination between the demographic and cartographic units in some countries where enumeration area demarcation was the responsibility of the former unit while the preparation of maps was done by the cartographic unit; lack or complete absence of any up-to-date maps and the difficulties, financial and otherwise, of preparing or acquiring such maps.

68. The general feeling was that census offices should embark upon cartographic preparations well in advance and in no case later than one year before the census enumeration. Preparation of enumeration maps for urban areas should not be left till the last moment under the often false assumption that it would be an easier task than preparation of maps for rural areas. An early start would give the census office sufficient time to acquire the necessary finance and equipment, and also offer the possibility of training staff on-the-job with the possible help of foreign expertise, if necessary. The need of a permanent cartographic unit was stressed not only to serve the census office but also to avoid duplication of work in view of the inter-censal survey activities that are carried out in most countries of the region.

69. In summing up the discussions, the secretariat clarified the issues raised in the discussions and re-emphasized the importance of the training of field staff, use of the latest base maps and remote sensing materials and the proper planning of cartographic activities in order to ensure their successful and timely completion.

Quality control in census enumeration (agenda item 5(e))

70. The document "Emerging issues in African population and housing census programme: Quality control in census enumeration" (E/ECA/CPH (e)) provided the background information for the discussion of this agenda item. In introducing the topic a representative of the secretariat recalled that since census data form the basis for important government decisions and also provide the benchmark information for other statistical enquiries efforts needed to be made to ensure good quality data. A programme for the control of quality of work in all phases of the census programme therefore should be prepared by census organizers.

71. It was pointed out that discussion was being restricted to the enumeration phase since that phase is regarded as very critical. Also in view of the very large number of persons involved and often with varying degrees of competence that phase required special attention.

72. The working group was reminded of the three essential elements in a quality control programme, namely determination of the techniques of quality control, the system of record-keeping and decisions made as well as actions taken on the basis of information from the records.

73. It was observed that African countries endeavoured to control the quality of enumeration in their last censuses through the training programmes of the field staff and attemps at having realistic workload for supervisors. However, no formal system of quality control involving appropriate recordkeeping and establishment of standards for accepting or rejecting an enumerator's work seemed to have been instituted.

74. In the discussion that followed, the procedures used to control quality of enumeration in a number of countries were mentioned. The place of publicity in a quality control programme was referred to. It was stated that if effective publicity and census education campaign was mounted respondents would be prepared for the questions which would be asked and this would help in improving the quality of responses. It was therefore indicated that publicity should have been included in the agenda for the working group.

75. Participants also emphasized that adequate training was an essential ingredient in any plan for the control of quality of enumeration. The need for extended training period which should include class and field exercises was therefore stressed. In this connection the strategies used or were expected to be used in some countries were mentioned.

76. In one case it was reported that in order to achieve uniformity in the training programme, the central census office trained a number of trainers who in turn trained the enumerators and supervisors thus reducing the number of intermediaries between the Central Census Office and the enumerators. In another case the supervisors would receive extensive training in the work of enumerators and would again be involved in the training of the enumerators so they were expected to be in a position to ensure good quality enumeration even though no formal system of sample verification was expected to be used.

77. Intensive supervision during enumeration was also stressed. In this connection an effective field organization with various levels of supervision to ensure that work would be checked at all stage was considered necessary.

78. A suggestion was, however, made that despite the training programme and the general system of supervision, it was essential that a formal approach in the checking of the enumerator's work as well as that of the supervisor was adopted. Guidelines should be prepared for supervisors to enable them do their work properly. The supervisors also need to record the activities required of them so that they could be checked. The system used in one country along these lines was mentioned.

79. A number of participants also indicated that in view of the importance of quality control in the entire census operation the background paper should also have covered other phases of a census programme.

80. A question was raised whether the types of field staff used in census operations in English-speaking countries were different from thos in the French-speaking countries. It was replied that the difference was only in terminology.

81. In response to some of the comments and queries raised by participants a representative of the secretariat indicated that the agenda items were selected on the basis of emerging issues from past censuses taking into consideration past recommendations. Thus issues which have been adequately covered in the past recommendations such as publicity, were left out even though census organizers need to continue to pay serious attention to those aspects of a census programme.

82. With respect to the quality control of other phases of a census it was pointed out that the preparation of a quality control programme should cover all aspects of the census but the enumeration phase had been selected for discussion partly because of the lack of adequate treatment in past censuses and also because of the critical nature of the enumeration phase in a census programme. Participants were, however, informed that quality control of the post-enumeration activities would be discussed under agenda item 8, census data processing.

83. Finally it was pointed out that the concept of quality control has been adopted from manufacturing field where it is used in controlling the quality of output. It was further indicated that African countries have generally not used any formal system to control the quality of census work. It was stressed that such a system was essential and it should involve sampling and establishment of standards which should form the basis for decision regarding additional training or removal of an enumerator.

Use of sampling in censuses (agenda item 5(f))

84. In introducing the document "Emerging issues in African population and housing census programmes: the use of sampling in censuses" (E/ECA/CPH/_(f), a representative of the secretariat reminded the meeting of the main advantages of sampling in censuses, namely: greater accuracy, reduced cost, wider scope and greater speed. African experiences in the application of sampling had been summarised in the annex to the document. These applications had been mainly in the field of pilot censuses, data collection, quality control statistical evaluation of coverage and content errors and advance tabulations.

85. With respect of pilot censuses, the representative of the secretariat referred to the types of sampling used, the timing, testing and experimentation and sizes of samples. He emphasised that there was a great need for more experimentation, using small samples, on such issues as alternate wording of questions, team enumeration as applied in the World Fertility Survey, data entry in the field and built-in cluster versus built-in individual person samples.

86. He also emphasised that not enough sampling had been used in the quality control schemes adopted by many African countries with the result that one of the primary objectives of quality control in censuses, namely that of controlling the process to minimize the error in the final product had been ignored.

87. In the discussions which followed, a number of participants explained that while ideally a pilot census should be carried out at least 12 months before the main census sometimes funding problems or delays in approving projects or late Government decisions on census dates have made it impossible for the pilot census to be carried out on time. The view was also expressed that most African countries recognized the need for experimentation but lack of adequate resources made it impossible for such experimentation to be carried out. The problems of matching the results of the census with those of a sample survey to determine coverage and content errors were also mentioned. Some concern was expressed that the provision of advance tabulations on a subset of the population may lead to the bulk of the data not being processed and tabulated. This would imply a substantial waste of resources in collecting data which would not be processed.

88. Emphasis was placed by participants on the need for careful preparation and proper selection of the Enumeration Areas for administering long and short questionnaires. It was stated that unless there was proper preparation and control of the process an inequitable distribution of workloads between short and long questionnaires interviewers would result. There were also implications for the training of the field staff. Should all of them be trained on the long questionnaire or only those who would be required to use the form should have to undergo such training.

89. Finally, it was recommended that since ECA has records of the experiences of African countries in censuses since 1960, it should try to document these experiences and prepare detailed manuals or guidelines for use of African countries in the next round of population censuses.

90. In response to these comments, the representative of the secretariat indicated that matching of responses from the census with those from a survey in order to determine coverage error presupposed that the two data collection operations were statistically independent. However, matching in a number of countries had encountered difficult problems, especially in West Africa, due to lack of uniqueness of names and the fact that the two operations had not been strictly independent. He also emphasised that enumeration areas for administering the long questionnaire should be selected well in advance of the census and proper care and controls instituted to ensure that those areas expected to receive long questionnaire received them. He referred to the experiences of two countries where some of the areas selected to receive the long questionnaire had instead received the short questionnaire and other areas selected to receive the short questionnaire had received the long questionnaire. With respect of training of enumerators he explained that with proper selection and planning it was possible to give separate training to those who are expected to use the short questionnaire and those who are to use the long questionnaire but provision should be made for reserves for both categories of enumerators.

91. Money for experimentation could probably be made available if countries would prepare small saleable projects on experiments for funding from external sources. He referred to the initiatives already taken by the International Union for the Scientific Study of Population (IUSSP) Committee on Data Collection and Processing in Least Developing Countries (LDCs) to assist in experimentation in the areas of testing different data collection approaches and the possible effects of different question designs on data quality and explained that the country projects in this context which should not cost more than $US10,000 could be linked with the IUSSP initiatives.

92. With respect of advance tabulations, the representative of the secretariat explained that the advance tabulations usually on 10 per cent of total population is not intended to preclude the publication of 100 per cent data. It is merely meant to provide timely data to policy makers, planners and researchers.

93. Finally, he explained that resources permitting ECA will be able to prepare detailed manuals or guidelines as requested for the 1990 Round of Population and Housing Censuses in Africa.

Measurement of economic activity in population censuses (agenda item (6))

94. The ILO representative presented the document "Measurement of economic activities in population censuses" (E/ECA/CPH/5). He stressed the importance of including questions on economic activity in population censuses in order to provide benchmark data as well as finely classified and small area statistics. He recognised however the difficulties of asking detailed questions on this complex topic in only a small number of questions. It was noted that the Census questionnaire would be over-burdened if the topic was explored fully.

95. The ILO representative briefed the working group on the recommendations made at the 1982 International Conference on Labour Statisticians, especially in respect of the definition of economic activity and in respect of the "usual" versus "current" economically active population.

96. The attention of the participants was drawn to the treatment to be given to special groups such as women, armed forces, unemployed who had never worked before, unpaid family workers and apprentices, and suggested some questions which might be used to collect data in a population census. Supplementary questions on occupation, industry, etc were included.

97. In the ensuing discussions, several participants expressed concern that the suggested questions were too long and that these would impose too great a burden on interviewers, respondents and data processors. It was pointed, that although questions like these had been tested and used in African surveys, it would be necessary to design questions appropriate to each country and to carefully test these before commencing full scale Census operations.

98. A member of participants were uncertain as to whether to use a "usual" approach or a "current" approach when asking questions on economic activity. Because of seasonality effects in rural areas, participants felt that questions on current economic activity would not be useful unless the reference period was (say) one month rather than one day or one week as recommended. At the same time, this would lead to problems of international comparison and also of over-estimation of the currently employed population.

99. It was generally accepted that the "usual" concept would be more relevant, especially in rural areas, but that this approach required too many questions as well as introducing problems of recall over a 12 month period. The choice of 26 weeks as being the cut-off point for determining economic activity status was also discussed, with some participants proposing that this should be a matter for each country to determine.

100. There was some discussion on the minimum age cutoff to be used for questions on economic activity. The International Labour Organization (ILO) has suggested that the minimum age cutoff should not be higher than 15 years in order to ensure international comparability. This does not prevent countries from asking the questions to younger persons if they so wish, but tabulations should separately identify the younger age group.

101. Some participants did not wish to include defence forces among the economically active population but others agreed that coding and tabulation could be arranged to avoid disclosure of defence personnel. It was pointed out that international comparability would be affected if there was inconsistent treatment on this point.

102. It was felt that the paper did not fully address the problems of measuring the economic activity of women and of selected other special groups such as those in the informal sector. Some participants considered that the 1982 Conference of Labour Statisticians presented recommendations which were too academic or not relevant to African problems and conditions.

103. It was pointed out that the revised recommendations had been carefully considered and tested, and that they are now more relevant to African conditions than previous recommendations.

104. Some participants were of the view that the document presented to the working group should also have covered the topic of "under employment" since this is considered more important than "unemployment" in many developing countries. The ILO representative indicated that the questions on under employment were too complex to be investigated in a population census and should be more appropriately covered in a Labour Force Survey.

105. In general, the Working Group felt that there was insufficient time to discuss this topic in the depth that was required. However, the participants expressed appreciation with the presentation of this very difficult topic and with the attempt by the Secretariat to relate the issues to the problem of developing countries.

Coverage and content error evaluation (agenda item 7)

106. The background document entitled "Coverage and Content Error Evaluation (E/ECA/CPH/4) was introduced for discussion by the secretariat. Participants were reminded that in view of the general recognition that census data cannot be correct to the last person there was general acceptance that census operations should include an evaluation programme which would provide information on the size and direction of error in the census data so that users would have indications of the degree of confidence in various uses of the data.

107. It was recalled that errors in censuses were of two main types, namely, coverage error and content error. The representative of the secretariat also made brief mention of the sources of errors in censuses and then indicated that the techniques for measuring those errors could be classified into two broad types. These are methods involving matching of individual records and those involving comparison of statistical aggregates.

108. Both methods involve comparison of census information with data from an independent source or data collection system. It was recalled that the main independent sources of data for census evaluation studies are: post-enumeration surveys (PED), independent ad hoc or continuing programmes of household sample surveys and administrative records. The current situation in the region regarding household sample surveys and administrative records seem to indicate that the PES would be, for the present, the only feasible source of data for census evaluation studies.

109. Participants were, however, reminded of the problems encountered by the few countries which have attempted the use of the PES to evaluate their census results and it was suggested that in view of those problems and the limited experience with the PES in the region the working group might consider re-emphasizing the previous recommendation that countries may use the PES only for coverage error evaluation and to use techniques of demographic analysis to evaluate content error.

110. During the discussion participants recounted their experiences in the use of the PES for the evaluation of census data. In one case it was indicated that manual matching caused considerable delays so there were plans to use the computer for matching in their next attempt.

111. Matching problems in connection with the PES were also raised and suggestions for tackling those problems made. These included making adequate provision on the questionnaire to assist in identifying households and housing units in the PES and the census and also the recording of full names of respondents on both the census and PES questionnaires.

112. Other problems mentioned included inability of enumerators to read maps and thus failing to cover selected sample areas accurately as well as failure to achieve independence between the PES and census because of shortage of interviewers.

113. Questions about the use of estimates of coverage error were also raised and it was indicated that the estimates were not to be used to correct the total count obtained from the census but could be used in adjusting the age and sex distribution of the population for purposes of population projections.

114 The importance of the timing of the PES was also mentioned by the representative of the United Nations Statistical Office. He pointed out that the time lag between the PES and the census should not be too long or too short to ensure that problems regarding population movements and memory loss would be minimized and independence between the PES and the census achieved. In this connection he mentioned that some countries in Asia and Latin Ameria carried out the PES a month after the census while in a few cases it was carried out just a week after the census.

115. An observation was also made that the use of the PES for content error evaluation was gaining acceptance in view of the limitations of the analytical techniques for that purpose. It was pointed out that the accuracy of the

estimates derived through analytical techniques can be adversely affected by errors in the census data. Hence it was suggested that African countries might consider using the PES not only for coverage error evaluation but also for evaluation of content error.

116. It was also pointed out that careful consideration should be given to the definition of the total population in both the census and the PES.

117. The representative of the United States Bureau of the Census also called the attention of the working group to the possibility offered by machine editing diaries for census content error evaluation. In this connection she indicated that error diaries produced by the CONCOR software package could be used to evaluate census content errors.

118. There was a general acceptance of the suggestion that census evaluation should be given serious early attention and that the preparation of an evaluation programme should be regarded as an important element in census preparatory activities.

119. There was also an endorsement of the recommendation that the preparation of the evaluation programme should involve the setting up of priorities and that the plans for any proposed PES should first be tested. The need for adequate budgetary provision and the necessary technical expertise was also stressed.

120. In response to a question regarding independence between the PES and the census, the secretariat pointed out that complete independence between the two operations could not be attained but efforts needed to be made to attain operational independence. This may be achieved by ensuring that census questionnaire would be collected from the field before the start of the PES and also ensuring the use of different enumerators in the selected areas.

121. The importance of publishing the results of the evaluation studies including full description of the methods used as part of the census publication programme was also emphasized.

Data processing: Methods and problems of the 1980 round of censuses (agenda item 6)

122. Under this agenda item, the secretariat introduced a document E/ECA/CPH/1. After indicating that data processing was one of the main functions to be carried out in the course of a census, the others being statistics, demography and management, the secretariat briefly described the methods generally used in computerizing census data.

123. Although the questionnaires used for data collection, coding and data entry in Africa censuses had generally been of appropriate designs, there were nevertheless problems throughout the data processing operations.

124. A proper planning of activities aimed at producing a basic and complete documentation, i.e. the design process had on the whole not been done at the beginning of the project. The design process should contain a comprehensive description of the various tasks to be performed, their functional links and an assessment of the time frame required to implement them in the light of the human and material resources available or required. As a result of such poor planning, the activities were managed in a disorganized fashion.

125. Sometimes, the optimal number of coding clerks and key operators required was badly estimated. Participants were reminded of the factors which had to be considered to ensure a realistic estimate of the number of clerks to be recruited and trained. The importance of verification was mentioned and a minimum rate of verification needed to be done using, if possible, random statistical sampling methods indicated.

126. There had been minimal co-operation among the specialists of the various subject areas with respect to preparing consistency check specifications and error correction methods in order to prepare the computer data editing programme.

127. Generally speaking, efficient data quality control systems for the whole computer processing programme were not established to permit objective judgement to be made of the data processed and obtain quantitative as well as qualitative information on how the work was progressing.

128. After review of the main types of hardware and software used, the secretariat indicated that a considerable variety of microcomputers had come into the market. There had consequently been a strong trend in the successful use of micro-computers in processing census data.

129. In the discussions that followed, it was agreed that the prior preparation of a log book was necessary but that such an exercise required expertise which African countries did not usually have. It was recommended that ECA should try to increase its services to the countries of the region in that area.

130. The lack of co-operation among census specialists which led to a sort of professional conflict was deplored. To improve the situation, it was suggested that various specialists should be trained in the use of computers in order to make the computer processing of census data less and less dependant on national computer processing centres.

131. In reply to a question on the usefulness of a CONCOR programme when data entry was considered good, it was stated that the use of such a programme was always recommended in consistency error detection and correction.

132. A particular feature of the discussion was the statement by the representative of the United States Bureau of the Census who distributed a document entitled Program for 1990 Round of Censuses - Guide to Planning, Training and Technical Assistance. She reviewed the various phases of census activities particularly the computer support required by each of the phases. She provided a list of software packages that were operational on IBM-PC microcomputers or equivalent compatible computers.

133. Any documentation and assistance could be obtained upon request from the United States Bureau of the Census. She promised to maintain close co-operation between the Bureau of the Census and the appropriate divisions of ECA.

Analysis of census data (agenda item 9)

134. In the presentation of the paper on evaluation and analysis of census results the secretariat stressed the importance of census data especially in view of the lack of other sources of information and pointed out that for utilisation of the data for planning and policy making one needs not only a large quantity of data but also reasonable quality of information and adequate analysis.

In preparations for the 1990 round therefore it was suggested that the evaluation and analysis should be planned well in advance and should aim to go much beyond what was attainable for the 1980 round. For instance it was mentioned that evaluation studies should cover not only the data but also the entire census. As regards analysis, it was recommended that in addition to basic demographic characteristics the socio-economic and housing information so assiduously collected should be fully exploited.

135. The role of local personnel in the evaluation and analysis of data was considered to be very useful and necessary to ensure the maximum benefit for the countries. Organization of training for local personnel would be more effective if it could be done within the country involving not only high-level but also middle-level statisticians from statistical office, sectoral ministries and other bodies.

136. In the discussions participants suggested that census data analysis should become more and more the concern of the local personnel and that countries should not rely exclusively on experts. It was mentioned that other local resources apart from those available in the census office should be tapped, e.g. universities. Furthermore, facilities offered by existing institutes such as RIPS and IFORD could be used to train nationals to analyse their own country data. An appeal was made to Governments to pay special attention to their students and provide them with data for analysis when they go for training. In this respect it was mentioned that countries should be encouraged to make good use of training institutions like RIPS and IFORD which should be given the necessary support for analysis and research work. It was considered that international experts should not substitute themselves for nationals and that local personnel should be more intimately involved in the analysis of the data. International experts should also preferably not be recruited for long term resident assignments but should rather be used to train the local staff during short-term supervisory-cum-training missions. This would also go some way towards making up for the loss suffered when highly qualified staff leave the census office after they have been trained.

137. In order that the regional institutes and the ECA could assist member States more effectively and pass on experiences of countries to others, it was suggested that not only all publications but also special data tapes, computer printouts and other data should be easily made available with due care being taken to ensure confidentiality. Such materials could also be useful for in depth analysis which could then be made available to the countries.

138. The expert group was of the view that adjustment to data should not result in further deterioration of quality of information collected admitting the fact that a perfect census is not feasible. In this connection the use of indirect methods and other tools for analysis should be carefully gauged and alternate techniques evolved especially in view of the fact that the 1990 round will result in most countries having data for two censuses. The view was expressed that some thought should be given to the gradual improvement of vital statistics and other data to allow the use of direct estimation techniques.

139. In reply the secretariat acknowledged the important role of training in creating capabilities within countries to carry out the evaluation and analysis of their data, and informed participants that any request for assistance especially for on-the-job training, middle-level training and other human resource development activities will be given great attention in the advisory services and in the work programme of ECA sponsored institutes.

140. The effectiveness of services of the secretariat could be enhanced by making available to it the publications, documents and other pertinent materials from censuses, surveys, registration, administrative operations and other activities especially if such materials contained in addition to statistical data also the methodology, procedures, problems faced, solutions found,etc.

141. It was recognized that under the existing situation whereby most countries have only one census experience and data for direct estimation techniques are incomplete and deficient, efforts should be geared to utilise intermediate techniques like two census survival ratios for construction of life tables once two censuses are completed. Efforts should simultaneously be made towards improvement of the statistical system especially on vital registration in order to derive vital parameters.

Publication and dissemination of census results (Agenda item 10)

142. The secretariat started the presentation of this item by underlining the fact that the census process should be considered as incomplete so long as the raw data and the analytical reports have not been published, because it is this phase which gives the final output of the census. The secretariat also pointed out the following:

(a) Little consideration has been given to the publication of census results during the past twenty years in the African region, mainly in sub-Saharan countries where it happened in a few cases that no results were published at all. Some countries just published the preliminary results and others only the final tables. A general report dealing with administrative as well as financial and methodological matters has rarely been published.

(b) Generally, the publication of data and analytical reports was very much delayed. One of the major reasons for this delay was the failure to include the publication plan in the general planning of the census operations.

(c) The publication plan should include the publication and dissemina ion of.

(i) the preliminary results, by sex, age and administrative units;

(ii) the final tables produced according to the tabulation plan prepared in advance on the basis of variables relevant to the priority needs of the country, the need for international comparability and the availability of resources;

(iii) an evaluation report;

(iv) analytical reports;

(v) an administrative and financial report;

(vi) a methodological report.

(d) Even in the countries where analytical reports were published, the impact expected on the users was not realized because only specialists could easily use the final tables and the analytical reports.

143. Finally, the secretariat pointed out the necessity, during the 1990 round,

(a) to prepare, in addition to analytical reports, other reports which could be easily understood by planners and other decision makers, so that they can make better use of the census results.

(b) to organize seminars and workshops to promote wide dissemination and better comprehension of census results.

144. The main conclusion drawn from the discussions which followd the secretariat's presentation were the following

(a) The publication plan should be prepared right from the beginning and should be integrated in the global plan of the census operations. The schematic publication plan suggested by the secretariat is useful.

(b) Census results should be published within 2 to 3 years.

(c) Publication time could be minimised if census offices were given independent printing equipment.

(d) Administrative and financial reports should point out problems faced and solutions found. Methodological reports should clearly explain the various concepts and also include the experiences gained at each census phase. These two reports will be useful for the coming censuses since staff motility is a problem in the census offices. They should also be included in the documentation of the demographic training and research institutes.

(e) ECA assistance to member States in data processing should also cover the setting up of data banks.

Financing population census programmes and role of external assistance (Agenda item 11)

145. Under this agenda item, the secretariat introduced document E/ECA/CPH/7 and indicated that the information available did not make it possible to carry out an adequate analysis of the actual costs of the population and housing censuses carried out in Africa during the 1975-1984 decade. The figures available at the secretariat indicated that the costs of such censuses generally varied between US$1.5 million and US$4 million. Those figures had probably been underestimated since the contributions of African Governments, particularly indirect costs, had not been systematically recorded. The contribution of UNFPA which was the major partner of the countries of the region for the 1980 round of censuses, had amounted to US$ 49,3 million for 41 sub-Saharan African countries i.e. an average of US$1.2 million per country. External assistance inputs generally covered the international staff assigned to census projects, non-expendable equipment such as vehicles and computer hardware, expendable equipment such as computer paper, magnetic tapes and disks, supplies for mapping work and training. In several cases, external assistance had also been requested and secured to cover local costs particularly the salaries of field staff.

146. After reviewing the services provided by ECA regional advisers under the 1980 round of African censuses, the secretariat said that according to some indications, the countries of the region would still require considerable external assistance to implement their 1990 round of censuses particularly in the context of the current economic crisis. UNFPA assistance to 11 African countries which had already carried out or were about to carry out their

enumeration during the period 1985-1987 as part of the 1990 round of censuses, totalled $US6 million, i.e., an average of $US547,000 per country. One of the main objectives of census programmes was to enable the countries concerned to undertake population censuses and surveys in the future. Consequently, the training of personnel should be stressed.

147. In the ensuing discussions, some participants stressed the problems involved in accurately estimating the contributions of governments to the census programmes, there was, however, a need to be very meticulous in preparing the census budget. Other participants were of the opinion that many countries had not yet realized the importance of censuses. Some felt that external assistance helped to make the political and administrative authorities realize the importance of censuses. Moreover, the fact that the contribution of governments to the total cost of censuses did not attain 50 per cent should not necessarily be taken to mean a lack of interest especially since some countries had problems even in paying the salaries of civil servants during certain months.

148. Several participants mentioned the problems they had come up against in implementing the UNFPA budget particularly with respect to the supply of equipment for census projects. Some of them suggested that countries should be permitted to purchase some quipment which was available locally. It was mentioned that one country was advised to purchase an obsolete computer. Some participants requested explanations on relations between the United Nations Department of Technical Co-operation for Development (DTCD) and UNFPA. Other participants reiterated their proposal that UNFPA should give appropriate authorization to local UNDP offices in order to facilitate the management of the UNFPA budget.

149. Some participants mentioned the problems caused by fluctuations in the United States dollar, which was the currency in which UNFPA paid its assis ance as well as by inflation. They felt that allowance should be made for such factors in order to adjust external assistance contributions accordingly.

150. Others felt that a manual or guide should be prepared to that the procedures set by the various financing agencies for requesting assistance could be better understood. The Working Group stressed that the assistance provided by the various donor agencies should be well-co-ordinated .Indeed, such agencies had different aims and objectives and steps should be taken to avoid duplication of efforts.

151. Finally, the Working Group felt that particular emphasis should be put on training in the programmes for the 1990 round of censuses in Africa. Moreover, it was strongly recommended to strengthen the team of ECA regional advisers to enable it to provide the advisory services required by the countries of the region in the context of the 1990 round of censuses.

152. A representative of UNFPA gave explanation to the various issues raised by participants. The areas of assistance of his organization in Africa had been diversified since the beginning of 1980s; in the 1970s, the Fund had basically provided assistance for census projects. For the programmes of the 1990 round of censuses, 18 African countries had already submitted project documents to UNFPA. The total cost of censuses of the 18 countries had been estimated at US$91 million out of which US$25 million had already been seccured from various sources including US$13 million from UNFPA. The governments of

the countries concerned were expected to cover $US 34 million leaving a deficit of $US 37 million in respect of the payment of salaries of enumerators in particular.

153. DTCD was the executing agency for the country projects financed by the UNFPA. If correspondence on a census projet was sent directly to UNFPA, it was referred to DTCD. The same peocedure applied to request for additional funding. The tripartite review reports and six monthly project progress reports were the only sources of information available permitting assessment of progress and problems met in the implementation of projects. Obviously, those reports might not contain all the details on the problems encountered. The representative of UNFPA suggested that copies of correspondence sent to DTCD should be sent to him. When relatively moderately priced equipment was available locally, authorization could be given for the purchase of such equipment. However, all appropriate documentation must be provided. Following the review of project documents, proposals were also made to replace absolete equipment with one which was more modern and suitable for local use. In reply to a question the representative of UNFPA said that UNDP could, with the approval of DTCD, be authorized to execute some local expenses.

154. With respect to procedures for requesting assistance, the Fund had devoted greater attention to programming ever since the crisis it has gone through in 1981. UNFPA made projections and established ceilings for its assistance. Once the project document had been prepared, and this was often done with the assistance of ECA regional advisers, the Government officially submitted the document to UNFPA which then sent it to the United Nations technical a encies concerned for their comments. When the financing was approved, the project was implemented by DTCD with the substantive support of the United Nations Statistical Office and in close collaboration with the Government implementing agency which was usually the Ministry of Planning Department of Statistics when the project had to do with censuses.

155. Regarding the question of co-ordinating foreign assistance, the representative of UNFPA informed the Working Group that a meeting of countries interested in financing censuses had been organized in Geneva in June 1986 and in New York in October 1986. Only the United Kingdom had been in a position to provide a list of those countries it was interested in. The other donors had preferred to examine the requests on a case by case basis. The representative further indicated that there was a subdivision for multi-bilateral assistance within the Fund. Project profiles were prepared and sent to the various donors. An inter-agency co-ordination committee had been set up in 1985 to monitor the technical implementation and project financing. Unfortunately membership of this committee was restricted because of the distance. However, the minutes of the meetings of the committee were widely distributed. The representative acknowledged that problems in co-ordinating foreign assistance were real. Better co-ordination could be achieved at country level.

156. With regards to training, the Working Group was informed that following negotiations with the Canadian Government, and amount of US$2 million had been approved to finance training in all the phases of the censuses for sub-Saharan African countries for the 1987-1991 period. The action envisaged included short-term scholarships and the organization of training sessions and seminars at national and subregional level. UNFPA also encouraged the exchange of experience between countries by way of study tours. The resources for that programme had been made available to the Department of Technical Co-operation for Development. ECA will be closely associated in the implementation

of that programme. The training schedule and other relevant information would be sent to the countries in due course. With regard to the strengthening of the ECA regional advisors' team, the recommendation of the Working Group would be brought to the attention of the authorities of the Fund.

157. The UNFPA advised countries to make provisions for financing of data collection projects, particularly population censuses during the negotiations with UNDP on Indicative Planning Figure (IPF). The countries was also requested to submit formal request for financing population census projects to the local representative of EEC as well as to other interested bilateral donors.

158. The representative of the World Bank pointed out that the Bank was interested in financing activities in data collection on a case by case basis. The Bank was participating in the financing of censuses in Côte d'Ivoire and Niger. The Bank provided loans only not grants. The countries were advised to seek as many grants as possible and to use the Bank only as a last resort. Financing from the Bank could cover areas such as technical assistance, equipment and local costs. The interst rates were low or zero with a grace period of 10-15 years and a long repayment period of up to 50 years. The Bank's assistance could be part of structural adjustment, technical assistance or population and health loans. Projects concerning censuses should be submitted to the Bank well in advance of the scheduled date of the enumeration. In providing the loans, due consideration was given to inflation and to the borrowing capacity of the countries. However, if inflation was severe supplemental loans could be negotiated. With regard to the procedure, the Bank's local representative should be contacted. Emphasis was put on strengthening national capabilities in the use of data in planning.

159. On behalf of the United States Agency for International Development (USAID), the representative of the Census Bureau of the United States of America, indicated that USAID had provided assistance to censuses in Egypt and Morocco by covering local costs and data processing. A request should be addressed to the representative of the Agency if assistance was required.

160. In reply to a question, the secretariat explained that Table I of the document under consideration concerned sub-Saharan Africa and that the reference to page 2 mentioned a limited assistance of donors to the countries mentioned without specifying the areas of assistance (censuses population policy, etc.). Figures relating to the actual costs of the censuses carried out in the African region during the 1980s were not included in the document for two reasons. First, the information available on government's contributions was not reliable. Second, some African countries did not wish to see the information on their budget for the census published. Finally, the secretariat agreed with the representative of IFORD that some information on IFORD and RIPS, two ECA-sponsored institutions, should appear in future in similar documents on technical assistance.

161. In conclusion, the participants expressed their appreciation to donors and in particular to UNFPA for their highly valuable contributions to the 1980 round of population and housing censuses in Africa and expressed the wish that this assistance be pursued and increased for the 1990 round.

Other business (Agenda item 13)

162. Under this agenda item, the secretariat urged the participants to send to the ECA Statistics and Population Divisions any documentation available in the countries on censuses. In addition, the Statistics Division should be put in the mailing list for statistical publications in general within the framework of exchange of publications. It was suggested that the Statistical Newsletter, published by ECA and containing a list of publications received by the Statistics Division in the past six months, be used to assess the situation on this issue. The documents can be sent through the local UNDP offices.

163. Following a suggestion by the participants, regional advisers will also be requested to collect as far as possible any relevant documentation which is missing at the secretariat during their missions to the countries. Finally, in reply to a point made by one participant, the secretariat pointed out that the ECA Library regularly published a list of publications it received and therefore there was no risk of lack of information on this matter.

Adoption of report (Agenda item 14)

164. The Working Group adopted its report, as amended during its discussions, for transmission to the Joint Conference of African Planners, Statisticians and Demographers.

SUMMARY OF RECOMMENDATIONS

I. INTRODUCTION

This summary of recommendations for the African region should be considered together with the report of the Working Group on Recommendations for the 1990 Round of Population and Housing Censuses in Africa and the United Nations global supplementary recommendations for population and housing censuses (ST/ESA/STAT/SER.M/67/Add.1).

II. RECOMMENDATIONS

1. Intervening time between censuses

It is recommended that as far as possible population and housing censuses be carried out at regular intervals. Thus African countries should endeavour to maintain a decennial census programme.

2. Administrative organization of censuses

2.1 Census Office

(i) It is re-emphasized that African countries should establish permanent census offices which, whenever possible, should be sections or divisions of national statistical offices.

(ii) During the planning and execution of a census, the census office should have an expanded organizational structure with the duties of each unit and staff well defined and the various tasks clearly indicated. The structure should, however, be flexible enough to enable it to adjust to the various phases of the census programme.

2.2 Census committees or commissions

When census committees are considered to be necessary for the smooth implementation of a census programme, great care should be exercised in deciding on the level of representation of the various agencies on the committees. The representatives of the collaborating agencies should be senior enough to enable them take decisions which will commit their agencies but not necessarily of such high rank as to make it difficult for them to attend meetings of the committees regularly.

3. Census cartography

(i) It is recommended that census/statistical offices should prepare comprehensive programmes for census cartographic work. The programmes should indicate precise objectives, methodology and timetable of activities with respect to the immediate periods before and after census enumeration as well as the longer intercensal period taking into account the available human and material resources.

(ii) Steps should be taken to ensure the proper storage of cartographic documents and efficient maintenance of a geography file as well as the establishment of an active intercensal mapping programme.

(iii) Efforts should be made to improve the delineation of enumeration and supervision areas by correct plotting of localities and other relevant topographical features on the base map and making reasonably accurate estimation of their population to ensure the efficient allocation of work to enumerators and supervisors and an effective control of enumeration.

(iv) It is essential that a list of enumeration areas (EAs) indicating the EA code as well as the name and geographical identification code of each administrative area is prepared and used for the control of all census operations.

(v) To enhance the utility of census data it is recommended that the census publications of statistical tables should contain appropriate maps showing locations of various area units for which the data are presented. These maps can be easily generated from the census base maps.

(vi) Recent developments in the electronic data processing field have promised a wider scope for use of computers in the production and storage of various census maps. The facilities of micro-computers available with most of the census offices can be used effectively for production of thematic maps and charts as well as other publication maps.

(vii) Where aerial photographs and/or satellite imagery are available, they should be used for updating base maps and delineating EAs/SAs.

4. Enumeration procedures

4.1 Unit of enumeration

(i) In order to make census data more useful for socio-economic development planning, the household or other relevant basic socio-economic group and living quarters should be used as units of enumeration and analysis in addition to the individual person in population and housing censuses.

(ii) The distinction between household and living quarters, however, needs to be clearly maintained. They are related but separate concepts which should be clearly defined and examples given in enumerator's instructions manuals.

4.2 Census questionnaire

(i) Greater attention should be given to the wording of questions on census questionnaire particularly those relating to complex topics such as economic characteristics in view of the low level of education of some enumerators.

(ii) It is also recommended that where the strategy of using enumerators to code the census information during enumeration is being adopted for the first time, both the verbal responses and their codes should be recorded particularly in cases where acceptable response categories are more than five.

4.3 Coverage of special population groups

(i) Since the homeless persons may be a significant element in some areas of many large cities even though they may constitute a small proportion of the total population census organizers should give serious consideration to their coverage. The proposed procedures for their coverage need to be tried out during the various census tests.

(ii) It is also recommended, where applicable, that studies of the social systems and patterns of movements of the nomadic population should be carried out during the period of census preparatory activities in order to determine the appropriate approach or combination of approaches for their coverage. Special attention should also be paid to pygmies and remote area dwellers.

(iii) Since a population census provides a good opportunity to collect some information on disabled persons it is suggested that disability should be included in the census topics. Investigation of disability in censuses may in certain cases be restricted to selected disabilities such as blindness, deafness and loss of one or more limbs.

(iv) Finally it is recommended that African census organizers should ensure effective dialogue with users of statistics on special population groups such as the disabled, women, youth and elderly so that tabulations with the required details for such groups would be produced. In particular efforts should be made to publish data needed for monitoring and analysing the situation of women.

4.4 Need for experimentation

Census organizers should use the intercensal period and the various census tests to experiment on the use of various concepts and innovations in data collection.

5. Definition of total population

(i) Census organizers should indicate clearly whether the population to be covered in the census will be the usual residents or persons present in the country or area at the time of the census or both types of population. If both types are enumerated tabulations should be produced separately for the two types. Preferably detailed tabulations should be produced for only one type and a few basic tabulations for the other.

(ii) It is also recommended that the treatment of special population groups such as refugees, nationals temporarily in another country as migrant workers, diplomatic personnel and their families and other such groups as listed in the United Nations Principles and Recommendations for Population and Housing Censuses (ST/ECA/STAT/SER.M/67) should be clearly indicated and the size of each such group in the total population given in census publications to help in international comparison.

6. Quality control

(i) In addition to efforts to ensure adequate training and selection of staff, census organizers should institute a more formal system of quality control of the various census operations particularly census enumeration.

(ii) The quality control system should involve systematic sample verification, proper record keeping and definite standards for accepting or rejecting an operator's work.

7. Use of sampling

(i) It is re-emphasized that in view of the advantages of greater accuracy, reduction in costs and greater speed, sampling needs to be used in the different stages of census operations wherever possible, particularly pilot tests, collection of additional information, quality control, preparation of advance tabulations and post-enumeration checks of coverage and content errors.

(ii) In the area of data collection it is suggested that only very few items such as name, relationship to head of household, sex and age need to be collected on 100% basis. The additional topics may be investigated by African countries which are sufficiently advanced in the art of census taking on the basis of sample lines predetermined on the census questionnaire. Other countries may use the approach of a short questionnaire for all the population and a long questionnaire for a sample of the same population administered simultaneously during the census operations.

8. Measurement of economic activity in population censuses

(i) In view of the need to obtain detailed statistics (including small area statistics) in respect of the economically active population at regular intervals it is recommended that population and housing censuses should include questions on the economic activity status of the population as well as questions on the occupation industry and employment status of the employed population on the last occupation and last industry of the unemployed population and on the main activity of the not economically active population.

(ii) These questions should as far as possible follow the revised international standards on the measurement of economic activity as established by the International Labour Organization (ILO) on the recommendations of the 13th International Conference of Labour Statisticians (Geneva, October 1982) and should give special attention to the measurement of economic activity in rural areas informal sector and for women.

(iii) It is recommended that tabulations be produced for persons in respect of the above mentioned economic characteristics classified by age, sex, education level and other items.

(iv) It is also recommended that thorough training be given to enumerators on the census questions relating to economic activity and other economic characteristics.

9 Coverage and content error evaluation

(i) It is essential that the preparation of a programme for the evaluation of census coverage and content errors is undertaken as an important census pre-enumeration activity.

(ii) The preparation of the evaluation programme should involve the setting up of evaluation priorities on the basis of the expected uses of the census data and experience in respect of the quality of information on similar topics investigated in past statistical enquiries.

(iii) In view of the general lack of reliable alternative sources of independent data in Africa countries for census evaluation involving matching of records the PES is a desirable component in the census evaluation programme.

(iv) If a PES is to be carried out, past African experiences particularly those regarding matching problems should be given serious consideration and the proposed instruments and procedures first tested. It should be stressed that unless the tests show that the technical problems could be controlled to ensure satisfactor, results and adequate budgetary provision and the necessary technical expertise would be available the exercice should not be attempted.

(v) It is further re-emphasized that in view of the relatively limited experience of African countries with the PES and the known problems in carrying it out, countries which opt to include it in their census evaluation programme may use it to evaluate only the census coverage. Content error should be evaluated by techniques of demographic analysis.

(vi) The possibilities offered by machine editing diaries for content error evaluation particularly those produced by the CONCOR software package should be fully exploited.

(vii) Finally the estimates of coverage and content errors obtained from the evaluation studies together with a full description of the methods used in the evaluation of the census data should be published.

10. Census data processing

(i) It is vitally important that from the outset of the project a comprehensive design process should be prepared including the tasks to be performed, their functional links and an assessment of the ressources and the time frame required to implement them. In this connection and in view of general lack of local expertise in the matter steps should be taken to get the advisory services of the ECA more involved in the design stage of the census activities.

(ii) It is recommended that wherever appropriate African census organizers should take advantage of new developments in computer technology and use stand alone micro-computers for census data entry, validation and tabulation. The method will also require much less effort in training the necessary personnel. Further, micro-computers offer grater flexibility and will generally improve the data processing capability of statistical offices during the intercensal periods.

(iii) The necessary data processing equipment should be acquired before the pilot census to enable the system to be tested and to save time during the data processing and analysis phases.

(iv) Prior to census enumeration a comprehensive document on edit specifications including automatic detection and correction of consistency errors should be prepared jointly by the subject matter specialists and the electronic data processing personnel. The editing programme and hence the automatic corrections should be evaluated through a comparison of some basic tabulations of the corrected data with similar tabulations of uncorrected data.

(v) Also efforts should be made to take advantage of appropriate available software packages to ensure timely completion of census data processing.

(vi) Finally, it is suggested that in order to further improve the timeliness of the processing and analysis of census data subject matter specialists should receive some training in electronic data processing. In addition, statistics/census offices should be provided with data processing equipment to make the census data processing less dependent on the national computer centre where this is not under the control of the statistics/census office. Also, in view of high turnover of electronic data processing personnel, efforts should be continued to train more data processing staff particularly the middle-level staff.

II. Analysis of census results

(i) Analysis and tabulation plans should be prepared at a very early stage and in any case prior to the finalization of the census questionnaire.

(ii) Data users should be involved in the discussion of census questionnaire items as well as the tabulation and analysis plans and also be associated with the analysis and interpretation of the census results.

(iii) In view of lack of adequate trained manpower for analysis and interpretation of data, short duration intensive in-service training programmes on data analysis should be organized for both middle and high level personnel as part of the census programme.

(iv) Population projections at national, sub-national and sectoral levels should be prepared under a suitable range of variants including speculative illustrative projections so to demonstrate the implications of various policy options and demographic paths.

(v) The use of computer software packages for demographic analysis should be intensified and appropriate techniques and tools for policy oriented analysis developed and disseminated.

(vi) Data correction and adjustments should not supplant or substitute care and caution in data collection. Application of methods and techniques for data evaluation, adjustment and analyses should not ignore the importance of a population's characteristics, geography, economy, socio-cultural patterns, history etc. Also care should be taken to avoid "over correction" of data which may distart the true situation and mislead the users of such data

12. Publications and dissemination of census results

(i) Efforts should be made to place the final census results at the disposal of the users within two years or at the latest three years following the enumeration.

(ii) Administrative and methodology reports documenting the various steps and stages of a census programme including details of expenditures and definitions of concepts should be prepared and published.

(iii) National seminars and, if possible, regional or topic-specific seminars such as regional development, education, health or housing should be organized to disseminate the census results and to provide opportunity for dialogue between census data users and producers. Statistical Offices should make efforts to enter into dialogue with planners for the integration of population data into the planning process.

(iv) In order to ensure maximum use of lessons from past censuses and also in view of the high turnover of staff in census offices it is essential that census organizers systematically record and publish census procedures and experiences.

13. Storage and retrieval of census documents

The census documents should be kept in safe custody and properly maintained to ensure their availability for future reference.

14. Census financing/technical assistance

(i) It is recommended that African countries should include decennial censuses in their statistical development programmes which also should be incorporated in the country's development plans to ensure adequate forward budgeting and mobilization of the necessary resources for census programmes. In this connection, it is stressed that any external assistance should be regarded as supplements to government financing of data collection programmes.

(ii) Census organizers should prepare comprehensive financing and training plans with clear indication of the expected sources of funds as part of the overall census programme. They should also make sure that there is an understanding of all concerned that the financing plan would be reviewed during the implementation of the census programme and any required revisions made.

(iii) The annual government inputs for the census should be approved and necessary funds released well in advance of the relevant activities. Where government financial regulations would permit, the funds may be paid into a special account if it is considered to be the most effective way of ensuring timely released of funds for the census.

(iv) In view of the current economic difficulties of many African countries, it is strongly recommended that UNFPA should continue to give assistance to African census programme during the 1990 round and also increase its efforts in promoting co-financing and co-ordination of external assistance for African censuses in order to ensure that the foundations laid during the past two decades would be consolidated.

(v) In order to maximize the effectiveness of external assistance from multiple donor agencies, it is recommended that a machinery involving the census organizers and the local representatives of the donor agencies concerned should be set up at the country level to ensure the effective co-ordination of the delivery of the financial and technical assistance.

(vi) Census organizers and donor agencies should put special emphasis on data processing, analysis and dissemination of results as well as training of staff in all aspects of census taking and short-term consultancies/advisory services, where appropriate, in order to promote self-reliance and thus strengthen the capability of the countries of the region in carrying out population census and other demographic enquiries.

(vii) As a general rule, the national staff should take the main responsibility for the census operations. When international experts are used they should provide technical guidance and assistance as well as training of staff.

(viii) It is recommended that the ECA advisory service in demogrpphic data collection, processing, evaluation and analysis should be strengthened to enable it cope effectively with the workload involved in providing such assistance to all member countries. In particular, in view of the recommendation regarding the use of sampling in censuses, ECA should be given the necessary facilities to enable it provide advisory services/consultancies to African countries on the use of sampling in their census programmes. Also, the regional training institutes should be strengthened and their services utilized more intensively.

(ix) It is recommended that efforts should be made to promote exchange of experiences between African countries in the field of population and housing censuses, particularly through organisation of study tours and/or recruitment of experts within the framework of Technical co-operation among developing countries (TCDC).

(x) It is recommended that ECA should take steps to ensure that the following technical documents are prepared for the guidance of African census organizers.

- Manual on measurement of economic activity in population censuses in accordance with the new ILO recommendations under African conditions;
- Guidelines on the use of sampling to collect additional information in population and housing censuses in Africa;
- Manual on census data processing particularly through the use of micro-computers.

EVALUATION OF THE WORKING GROUP

1. The completed 25 evaluation forms indicate that the majority of participants were satisfied with the organization, content and recommendations of the meeting.

2. Explicitly almost all participants reported that they were given enough notice and adequate information on the objectives of the Working Group, that the duration of the meeting was just right and the timetable demanding but bearable. However, they suggested that all background documents should have been sent to participants well before the meeting.

3. Most participants classified the presentation of the topics as very good or good. However, suggestions were put forward about issues which were not on the agenda or not extensively discussed during the meeting, namely,

- Publicity techniques,
- Migration (internal, intra-african and international),
- The use of micro-computers at all stages of the census,
- Printing facilities.

4. Finally, the participants identified the lack of financial resources and the lack of technical documentation and expertise as the greatest problems in putting into practice in their various countries the recommendations of the Working Group.